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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Insects and Rodents RELEASE Tues., Mar. 1.

NOT FOR PUBLICATION

ANNOUNCEMENT: Hawks and owls: -- That's what we're going to talk about in tonight's bugs and rodents program released by Uncle Sam through Station_____, although they are birds, and thus neither bugs nor rodents. Hawks and owls are mainly beneficial. But let's leave the story to him who's going to tell it....

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A bright, blue day. Sunny. No clouds. Lazy. My friend, Ideways, and I, lay on the side of a warm hill, talking lazily, and looking into the blue sky. There was scarcely a sound to be heard, except a friendly little breeze that stirred through the trees, and the occasional murmur of our own voices.

A bright, blue day all right, and that old hawk high in the air knew it as well as Ideways and I. We could just see him, away up there, circling slowly, coasting on his broad wings. The majestic old fellow was taking his time -- taking his time to appreciate a warm sun and a good earth.

"He reminds me of slow music," said I. "Slow music of a harp with the wind fingering the keys".

"What you talking about?" Ideways exclaimed suspiciously. "I don't hear any slow music".

"Why that hawk circling up there. See him?"

"Hey! Wait till I get a gun! He won't get any more of our chickens then!"

"Oh, be yourself", I objected. "That hawk never caught a chicken in his life. Lie down again and take it easy and I'll tell you about hawks. You're just like most folks. They think hawks and owls are continually stealing chickens. Many a house cat kills more chickens than a hawk gets in a life time".

"Say, don't try to kid me", said Ideways jokingly. "I've lived on a farm all my life up to now. I know my hawks, Jim".

"I'm telling you", I answered, "that most hawks and owls are actually beneficial. Of course, there are some, like the Cooper hawk, the sharp-shinned hawk, and the great horned owl that do considerable damage. But

to balance these three bad ones, we have a long list of hawks and owls that do real good for farmers and townspeople. Take the rough-legged hawk, the squirrel hawk, the marsh hawk, Harris hawk, sparrow hawk, barn owl, Richardson owl, burrowing owl, and a dozen more. Those are either wholly, or mainly beneficial."

I could see that Ideways was not convinced.

"How are they beneficial?" he finally asked.

"Predatory birds like hawks and owls are the great scavengers of the sky", said I. "They prey upon insect pests -- but chiefly on rats and mice.

"'A little learning is a dangerous thing! you know Ideways", I continued. "A farmer sees a hawk strike a fowl which has wandered from the farmyard. The sportsman, while planning the capture of a covey of quail, finds the half-eaten remains of a game bird and at once decides that it was the victim of some owl. Without further investigation, both farmer and hunter immediately decide that birds of prey are thieves and are harmful as a class, and lose no opportunity to destroy them and their young.

"They don't know, perhaps, that they're killing off one of the farmer's best friends. Let us examine the stomachs and the habits of hawks and owls to find out what they actually do eat. Take the red-tailed and the red-shouldered hawks, for instance. There's no doubt that they occasionally do eat a chicken. But in return for an occasional chicken, Ideways, what services do these hawks give the farmer?"

"I don't know", said Ideways. "What good do they do. You tell me".

"Stomachs of the red-tailed hawks examined contained 11 species of squirrel, harvest mouse, common rat, house mouse, and other mice and rats, porcupine, jack rabbit, cottontail rabbit and pocket gopher. Most of these are farm pests.

"Recently, about 30 marsh hawks were found frequenting a section inhabited by quail. The hawks were suspected of killing the quail in the covers and about half of them were shot, before someone suggested that their food be studied. In common with all birds of prey marsh hawks regurgitate indigestible portions of their food in the form of pellets. Over 1,000 such pellets were examined, each one representing a meal. The result was that the remains of but four quail were found. But 900 of the meals had included one or more cotton rats, which eat the eggs of the quail. In other words, the hawks were actually one of the quail's best friends in that locality. The sportsmen, in killing these marsh hawks, were destroying their chances for future quail hunts in that preserve.

"A certain scientist once estimated the number of grasshoppers a number of Swainson hawks would eat in a month. Soon after the grasshopper breeding season, the hawks collect in flocks in the foothills and on the plains of the West. They feed then almost entirely on grasshoppers and crickets. Now if we say that a hawk eats 100 hoppers a day -- and the chances are that he'll eat many more than this -- 300 hawks would eat 900,000 grasshoppers in a month. The hoppers would weigh about 2,000 pounds. The scientist estimates that those grasshoppers would consume about 30 tons of farm produce in a month."

"Doesn't sound possible," said Ideways doubtfully.

"If you know hawks and grasshoppers as well as this scientist does," said I, "you'll know it is possible. There's absolutely no doubt about it. It's true."

"Well, maybe we have been persecuting hawks and owls by mistake," Ideways admitted, "but, you see, I'd never paid much attention to the good they do."

"That's just the trouble," said I. "Outside of a few harmful rapacious birds, practically all of those beautiful creatures you see circulating high in the air are actually beneficial. We're just beginning to learn that the shameful war on our birds of prey as a class is not only unjust, but harmful to the best interests of farmers, orchardists, and sportsmen. In many communities, the men directly concerned are finding this out. These men are dropping their groundless prejudices against hawks and owls and are coming to appreciate these birds' true value to mankind. Hawks and owls are ridding the farmer's fields of serious pests every day. I believe that when we learn the true value of predatory birds -- and take the proper steps to protect them -- disastrous outbreaks of animal and insect pests will become rather rare.

"With the exception of the destructive Cooper hawk, sharp-shinned hawk, and the great horned owl, we can safely say that the rapacious birds are among the farmer's best friends. Every farmer should learn how to distinguish three enemies from his bird-friends".

Ideways was listening carefully now. We looked up into the air. The majestic bird was still circling slowly and silently. Then he said.

"I'm interested. I want to know where I can find out more about this matter".

"Send to the United States Department of Agriculture for a publication on the subject", I replied. "It will tell you a lot more about hawks and owls than I can".

That holds good for all you radio listeners, too. So good night.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM Autobiographies of Bugs and Rodents. RELEASE Tues. Mar. 8.

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NOT FOR PUBLICATION

ANNOUNCEMENT: How to cut cutworm losses in field and garden: That's the subject for this evening's chat on infamous insect pests. This feature is released every Tuesday by the U. S. Department of Agriculture through Station_____.

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You've seen the moths, parents of the cutworm, flitting about the bright lights on a summer evening. We call them millers and they come out after sunset --- when the birds are chirping their good night songs ------- and circle about the lamps. Pick them up and your fingers will become dusty with brown, grey or white fuzz. These are the foolish moths that never learns to avoid the flame. Their wiser offspring are cutworms.

Scientists have a long, difficult name for them. But cutworms --- that's what we mean. That's the name most commonly used.

So this is the story of the "millers" that lay the eggs that produce one of the main pests of field and garden. Let us take a minute to tell about their life history. Then we'll tell you what to do about them. Now is the time to get busy and control these pests.

Cutworms are widely distributed. In fact, no form of insect injury is more familiar to growers of plants than that caused by this important pest. The Indians found cutworms troublesome in their fields of corn long before the first white man set his adventurous foot on American soil. The early Colonists learned a lot about control measures from their Red brothers. As the continent has come more and more under the plow, these pests have taken a heavier and heavier toll from the farmers who till the soil. Sometimes cutworms break out in great numbers and millions of the worms cause damage running into the millions of dollars.

Poison bait is the best control measure. But we'll come to that in about a minute. Better have your pencil handy. You'll need it.

Cutworm injury almost always occurs in the spring. The plants are generally cut off at the surface -- or a little below the surface -- of the ground. This injury begins as soon as the first plants sprout and continues until late June or early July. By that time the worms -- which may be 2 inches long -- have become full grown. The worms feed at night, like rats and cockroaches. They rest during the day -- hidden under rubbish, or buried half an inch or an inch under ground. Sometimes it's hard to find them, because they are almost the color of the soil. But if you look about carefully near the cut plant, you'll probably find the culprit worm, curled up in the soil, a small, snug ball.

We want to tell you how to control cutworms. Fortunately cutworms can be easily killed with a poisoned bran bait. Get your pencils and write this down.

THE BAIT

Dry bran	1 peck or 5 pounds
White arsenic or Paris green	1/4 pound
Sirup or molasses	1 pint
Water	3 or 4 quarts

If large quanties are required, increase the amounts of the ingredients in the proper proportions.

First: Thoroughly mix the arsenic with the bran. This is important. Each particle of bran must carry a little poison to get a good kill. In small quantities the bait can be mixed in a bucket with a paddle, adding the poison slowly and stirring the bran at the same time. A still more effective way is to mix the poison and bran with the hands, but since soluble arsenic is absorbed to a slight extent through the skin, there may be some objection to this method. If the hands have cuts, scratches, or other wounds, do not put them into the bait. When making large quantities, the arsenic can be mixed with the bran on some flat, smooth surface, using a shovel and rake in much the same way as concrete is mixed.

Second: Mix the sirup with the water.

Third: Add the water and sirup solution to the mixture of bran and arsenic, stirring slowly all the time. Large quantities of water added at one time will wash the poison from the bran, resulting in an uneven mixture.

CAUTION -- Add only enough liquid to make a crumbly mass. It is a good plan to set aside a little of the mixture of dry bran and arsenic so that if too much water has been used, this dry reserve can be added to bring the mixture up to the proper consistency. Large quantities can be made up in galvanized or wooden washtubs, and small quantities in buckets or similar containers. KEEP CHILDREN, LIVESTOCK, and CHICKENS AWAY FROM THE BAIT. IT'S POISONOUS, REMEMBER. WITH PROPER CARE, THERE IS NO DANGER.

HOW AND WHEN TO USE THE BAIT -- Either broadcast the poisoned bait or sow it by hand along the rows or about the base of the plant. Do this late in the evening so that the bait will not dry out to any great extent before the worms get busy. Since cutworms overwinter in the ground, it is a good plan to broadcast the poisoned bait over the cultivated areas a few days before the crop comes up or is set in the field. Where plants are to be transplanted to the field, this method is particularly valuable. If hills are made up for melons or tomatoes, apply the bait directly to the hills a few days before the crops is set in the field. Applications of this kind will rid the field of many of the worms before the crop is subject to attack.

We want to tell you how to [illegible] cutworms. Fortunately cutworms can [illegible] poisoned bran bait. Get your pencils and write this [illegible]

[illegible]

Bran . . . . 1 peck or 5 pounds
[illegible] or Paris green . . . . . . 1/4 pound
Sirup or molasses . . . . 1 pint
Water . . . . 2 [illegible] quarts

If larger quantities are required, [illegible] amounts of the ingredients in the [illegible].

First: [illegible] the arsenic [illegible] the bran. This is important. [illegible]

Second: [illegible] sirup with the water.

[illegible] bran [illegible]

[illegible] set in the field. [illegible] set in the field. [illegible] of the [illegible] before the [illegible]

AMOUNT OF BAIT TO USE -- Ten to 15 pounds of the wet bait is enough for one application per acre. Where the bait is applied directly to the rows or hills, a smaller quantity will be sufficient. It may require two or three applications at 2-day intervals to rid the field of the pest.

Sometimes the worms move from field to field. When that's expected, it's an excellent practice to lay a narrow band of poisoned bait between your field and an infested field. Many farmers plow a deep furrow between their fields and a worm-ridden area. When the cutworms, moving as an army, try to execute an invasion of the clean field, they fall into the front line trench. They may be put out of the running then by dragging a log through the furrow several times until all the invading worm army is destroyed.

You may get full information on the cutworm by writing to the U. S. Department of Agriculture. And now, hoping you have a wormless season this year, I bid you good night.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Bugs and Rodents RELEASE Tues., Mar. 15.

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NOT FOR PUBLICATION

ANNOUNCEMENT: The crow -- Robin Hood of the feathered world -- is the subject of this evening's chat. The stories of birds, bugs, and rodents, are released every Tuesday by the U.S. Department of Agriculture through this Station.

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"Crows are queer birds", said my companion. "Black as the ace of spades. Wise. Cunning as a fox. Talkative and sociable. I like 'em".

"Why?" I asked.

"Well, let me tell you a little story about a pet crow a farmer friend of mine had. It seems he also had a dog. This dog loved to chase sticks and stones when they were thrown by his master. The pet crow apparently noticed this and worked out a plan to give the dog pleasure.

"Every afternoon, when the sun was warm and the air was lazy, it was the custom of the dog to lie down in the cool grass and take a little nap. During these naps, the crow would perch upon the top of a shed near by. Perch there and think -- perhaps. Who knows what crows think on sunny afternoons!

"But out of these lazy afternoon siestas came the plan. Finding a stick of convenient size, the crow would hop and fly near to the snoozing dog. Then it would quietly place the stick near by and nip the dog briskly on the heel. At this urge, the dog would awaken with a surprised yelp. Quickly the crow would snatch the stick and fly unhurriedly away -- but seldom more than 4 feet from the ground. The dog would dash after his black friend, madly trying to get the stick. This innocent little game would continue until the two friends were tired out. Then friend dog would stretch in the grass and lose himself to the world of conscious things. Cunning old Jim Crow would find his perch on the shed top and give his time to whatever crows think about an lazy afternoons. Yes -- I like crows".

"That's an unusual story", said I, "but they tell me crows do a lot of harm."

"Well, crows and cornfields usually go together", said my friend who has made considerable study of the subject. "Crows do like corn and eat considerable quantities of it in a year. But it's mostly waste corn, I'm told. Now and then they also rob hens' nests and eat the eggs. I've even

known them to steal young chicks at times. But to balance this, they eat millions of grasshoppers, May beetles, and other injurious insects."

"Excuse me for breaking in", said I, "but I'd like to know about these famous crow roosts I've heard so much about. They say thousands of the black rascals gather together there in the winter. You can tell me more about what crows eat, later".

"Just as you say", the friend of crows replied. "Here's the yarn as I know it:

"Crows are very clannish, as a rule. Like to go together. This is especially true during the colder months from October to March. Immediately after the nesting season, in early summer, they hunt food, quarrel and chatter, and get their fun in smaller groups of from 10 to a dozen members. These groups remain together along through July, August, and September. About October -- and from then on through the fall and winter -- the birds become extremely sociable. They gather in great colonies, coming together every night through the snowy months, to roost in real crow cities.

"These crow cities are really tremendous affairs. The bulk of the crow population of the eastern United States is gathered in two great districts during the fall and winter. One of these is found east of the Allegheny Mountains and another in the Middle West, the center of which is, roughly speaking, at about the place where the Ohio flows into the Mississippi. There used to be a great colony near Arlington, Virginia, where from 150,000 to 200,000 crows gathered every night. About sundown the great black crow cloud began to settle down on the trees.

"That's very interesting", I said. "Tell me some more about the habits of crows".

"They may be robbers, but they're kind to their young", my friend said. "Crows are really model parents. Their home life is very orderly. They build their nests in hidden places from 20 to 60 feet from the ground. In these, they lay from 3 to 7 eggs anytime from February to July. Young crows are always hungry, it seems. They stay in the nest about 3 weeks -- but often the parents feed them even after they leave the nest. All through July and August, crows may be found in family groups or small flocks, living comfortably on a commendable diet made up mainly of insects -- although the grain crop contributes to a certain extent to the family menu. Migration begins about September."

I wanted to know if crows are found in all parts of the world. My friend told me that you'll find crows of one kind or another at home throughout the continent of North America, in the bleak tundras of Siberia, along the shores of the Mediterranean --- in Africa, India, China, Japan, and on many islands of the far flung seas. South America alone knows him not. He added that the crow is really found in all parts of the United States, but that some of

the far western states have very few. The fish crow is seldom found more than 20 miles from the ocean -- although it's plentiful all along the Atlantic coastline from Connecticut to Texas.

"Why do farmers want to shoot the bird on sight, if all this is true?" I asked. My friend thought a minute, then said:

"Well, the crow has made a very bad reputation in corn fields. It also raids the chicken yard now and then and eats the eggs and young. It also makes away with crops other than corn. But sometimes we forget that the crow makes endless warfare on insect pests. Insects supply about one-fifth of its food and those eaten are among the worst pests the farmer has to deal with. Grasshoppers, caterpillars, white grubs, May beetles are among the favorites. It seems to me", he continued, "that the crow's merits and demerits are about equally divided. It wouldn't be wise to give it complete protection, for then a farmer would be prevented from killing the bird when it does real harm to his crops and poultry. But neither would it be a good idea to kill every bird on sight --- to persecute it in other words. A lot of the good crows do can't be spared. On the whole, crows do about as much good as harm. They prevent millions of dollars worth of insect damage every year".

"How am I going to prevent the damage they do in my cornfields and chicken yards, though?" I asked.

"The U.S. Department of Agriculture has a bulletin on the crow," he replied. "You can get a free copy by sending for it. It describes a number of control measures, such as using coal tar on seed grain -- stretching twine across chicken yards -- scattering grain in fields where the crop is just sprouting -- frightening the crows away with scarecrows and similar things. If you need more drastic measures to control the birds, the crow bulletin tells how to poison them -- trap them -- destroy their nests -- and shoot them in ways that will not be harmful to other bird life around the farm. The bulletin also contains other interesting information about the life history of the bird and its queer migrations."

"Seems like there's always another side to everything", I declared as we arose to go. "Here I thought the crow was entirely harmful. You've shown him up as an interesting fellow, almost human in some ways".

"Well, it pays to know both sides always," my friend said, and bade me good night.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Bugs and Rodents. RELEASE Tues. Mar.22/27.

(NOT FOR PUBLICATION)

ANNOUNCEMENT: Ants' cows, the subject of this evening broadcast from the U. S. Dept. of Agriculture, are among the destructive pests of flower and vegetable gardens. And you can't keep them out by wiring up the garden gate. This chat, released by Uncle Sam through Station_____, tells how to control them.

---ooOoo---

Ants' cows. That's an odd thought. Ants' cows are plant lice -- aphids -- those queer, tiny, soft, pea-green, pink, yellow, brown or black insects that every gardener has seen gathered on the shoots or the underside of the leaves of the plants in his garden.

Some varieties of plant-lice or aphids, particularly those that live on melon and cucumber plants, give off a honey-like liquid called honeydew. Garden ants have a strange fondness for this liquid.

Some of the more ambitious of the ants actually go so far as to take these aphids down into their underground tunnels and passages -- park them on the tender, young roots of plants where they can feed -- and then protect them from invaders. Interesting to know that even ants have cows, isn't it? And fence them in with little earthen fences so they won't get away and stray off into greener pastures that cows -- and men -- always seem to be looking for.

But say! It seems like we're getting so interested in ants that we're forgetting to tell about the damage plant lice do in your own gardens every spring and summer. If you raise tender, young vegetables for the table or for an early market -- or a late one, for that matter, -- If you raise flowers, roses, tomatoes, melons, etc., you doubtless have as much love for aphids as you have for your neighbor's chickens when they get through the fence and scratch up your flower beds. There's a way to control them, however, and it's simpler than keeping the chickens out, too. We'll tell you about it. First we'd like to talk to you just a little more about the personal habits of plant lice.

If rabbits multiplied as fast as plant lice do, inside of 6 months you'd have to walk over their backs to get anywhere. Let's take a typical case: Little Amy Aphid was born when her mother was 10 days old. In a few days she was grown-up. She's the eldest in a family of 124 children. She's 66 days old now, and has a family larger than her mother's. She's many times a great-great-grandmother and, since practically all of her children are sisters, she already has thousands of cousins.

Plant lice like to stick together, believing that in union there is strength. Little Amy is about an eighth of an inch long and green in color much like the plant she lives on. You have to have a sharp eye to find Amy. Last year, her family produced 17 generations. Amy says she doesn't know what the younger generation is coming to. To a good feast on your garden vegetables, we say. That is,

if you don't watch out.

As soon as the weather warms up in March, the younger generation begins to appear. About the first of May, some of them sprout wings and fly to the nearest garden plants. By the end of the summer, so many younger generations have appeared that -- if nothing happened to any of them -- there'd be several feet of Aphids covering the earch. That's a fact. Fortunately, aphids have many enemies. Among them are man, the ladybird, and the syrphus fly.

The ladybird, of course, isn't a bird at all. She's a small, red beetle. Some folks seem to think that these ladybirds are the parents of plant lice. As a matter of fact they're entirely different families and species. A well-grown ladybird requires from 50 to 80 aphids for her daily meal. Ladybirds, by the way, are among the gardener's best friends. Don't kill them off unless you want to give the destructive plant lice a chance.

Then there's the curious yellow, black-banded flies called syrphus flies. Syrphus flies are very fond of aphids. Eat them by the millions. They should be protected, also.

The other day our neighbor, who grows a lot of vegetables during the season, came to us and said: "These pesky plant lice are killing all my pea vines and I won't have half a crop if this goes on!" Then he wanted to know what to do about it.

Well, it's very simple. He could use a teaspoonful of nicotine sulphate mixed with a gallon of soapy water and spray it on the plants. Next day, he told us he tried it. "I'll bet those aphids were surprised when they got that deluge of fearful stuff", he said. "I'll bet I killed every plant louse in my garden."

"Well, let's go over and see if you did", we said. We looked the plants over carefully and -- much to his surprise -- there, under the leaves, were thousands of aphids alive and kicking. "Well, I'll be switched!" said our neighbor expressively.

"That won't be necessary", we told him. "Just try spraying again and use a good, strong spray pump which will shoot a fine spray. Then spray more carefully -- get under the leaves and all over the plants. Half-way measures don't work very well with plant lice."

When we treat our garden for plant lice, we generally use nicotine dust. It's as good, or better than nicotine sulphate spray because the dust reaches all parts of the plants -- under the leaves -- onto the tips of the shoots -- into the curled leaves where the aphids huddle. You can make a good duster by punching holes into the cover of a fruit jar with six-penny nails. Then put the dust in the bottle -- screw the cover on -- and go to work. Dust the plants well. Strong soapsuds, fishoil and soap, are also useful against plant-lice.

But if you put the matter off too long, there's not much use doing anything about plant lice. There's no point in spraying plants so wilted, eaten up, and dried out that they're dead anyhow. You should begin using nicotine, or the

other remedies, when there are only a few aphids. Don't forget that part of it.

Sometimes, when the aphids are missed by the sprayer or the dust, -hot, dry weather kills them. The little rascals like cool, damp weather, though, and grow like weeds when it comes along. But, whatever you do, don't trust to the weather to kill off your garden enemies.

That is -- unless you want to start a home for aged plant-lice, or a society for the prevention of cruelty to plant lice. Such organizations aren't necessary in this day and age. The little wretches grow fast enough as it is.

By the way, the U.S.Department of Agriculture has a number of bulletins on this subject. You may get your copies by dropping a postal to the Department asking for what you want. Address it to Washington, D. C.

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